CHAPTER 10

SECTION 3 APHIS LABORATORY CHEMICAL HYGIENE PLAN

10.3.1 PURPOSE

This section provides guidance for compliance with the Occupational Safety and Health Administration (OSHA) standard for Occupational Exposure to Hazardous Chemicals in Laboratories (29 CFR 1910.1450). This standard applies to all employers engaged in the laboratory use of hazardous chemicals.

10.3.2 POLICY

APHIS programs and activities will ensure that employees' exposures to hazardous substances in laboratories do not exceed standards established by regulatory or consensus organizations. Those standards are, respectively, the Permissible Exposure Levels (PELs) established by OSHA and the Threshold Limit Values (TLVs) of the American Conference of Governmental Industrial Hygienists (ACGIH). The best practice, as set by consensus organizations such as the American National Standards Institute (ANSI), National Research Council, or the National Fire Protection Association (NFPA), also will be followed. In the event of a conflict in standards, the stricter standard or best practice will be applied. Programs will minimize employee exposure through engineering controls such as chemical fume hoods, and, where possible, through the substitution of hazardous materials with less hazardous materials. Existing safety and health standards that require monitoring of exposures and medical surveillance (e.g., formaldehyde exposure) or avoidance of skin/eye contact also will be complied with. Program and activity heads will budget for training and employee medical examinations. Programs will not accept material for evaluation without receipt of a material safety data sheet (MSDS) for that material. All available information on the potential hazards of a process, chemical, or biological agent under study will be provided to employees prior to the initiation of that study.

10.3.3 DEFINITIONS

A. Chemical Hygiene Officer is a designated individual who, by nature of training or experience, provides technical guidance in the development and implementation of the chemical hygiene plan (CHP).

B. CHP is a written program developed and implemented by an employer which sets forth procedures, protective equipment, and work practices that are capable of protecting employees from the health hazards presented by hazardous chemicals used in that particular workplace.

C. Carcinogen or suspect carcinogen is a substance which is:

1. Regulated by OSHA as a carcinogen;

2. Listed in the category "known to be carcinogens," or "reasonably anticipated to be carcinogens" in the Annual Report on Carcinogens published by the National

Toxicology Program;

3. Listed under Group 1 (“carcinogenic to humans”), Group 2A, or 2B by the International Agency for Research on Cancer Monographs.

The above references are available from the APHIS library.

D. Designated area is an area used for work with carcinogens, suspect carcinogens, reproductive toxins, or acutely toxic materials.

E. Hazardous chemical is a chemical for which acute or chronic health effects may occur in exposed employees. This term will include carcinogens, toxic materials, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, etc., as defined in the Hazard Communication Standard, 29 CFR 1910.1200. For the purposes of this Agency, biological materials are included as well.

F. Laboratory is a facility where relatively small amounts of chemicals are used on a nonproduction basis.

G. Laboratory type hood is a device located in a laboratory which is enclosed on 5 sides with a movable (or fixed) sash on the remaining side and constructed and maintained to draw air from the laboratory environment and to prevent or minimize the escape of hazardous chemical contaminants into the laboratory. Chemical manipulations are performed in the hood.

10.3.4 RESPONSIBILITIES

Program and activity heads will:

A. Determine whether a given activity is covered as a laboratory (i.e., produces a report or finding rather than a product or simulation of the production process). Taxonomy, identification, pathology, and clinical "laboratories" are considered laboratories. Activities producing products for distribution such as reagents, biologicals, or standards are not.

B. Ensure that employee exposures to regulated substances do not exceed OSHA PELs or ACGIH TLVs by monitoring of employee exposure or by detailed analysis of the situation (i.e., person, process, and agent) and comparison with representative employee sampling. Potential employee exposure to some chemicals may require monitoring of employee exposure (e.g., formaldehyde or ethylene oxide).

Results of monitoring will be presented to employees within 15 days after receipt of results; copies of the results will be included in the employee's personnel and medical records. All records will be maintained in accordance with 29 CFR 1910.1020.

C. Provide employees with information and training to ensure that they are aware of hazards associated with the use of chemicals in their workplace.

D. Ensure that labels on incoming containers of hazardous materials are not removed or defaced and that any MSDS's received are maintained and available to employees.

E. Develop and carry out the provisions of a written CHP that is: capable of protecting employees from health hazards associated with hazardous chemicals in that laboratory, capable of minimizing employee exposures to chemicals, and readily available to employees. The CHP will be reviewed at least annually and updated as necessary. The program or activity head will designate a Chemical Hygiene Officer or establish a Chemical Hygiene Committee to implement the CHP. The identities of the Chemical Hygiene Officer and/or composition of the Chemical Hygiene Committee will be submitted along with the CHP to the Safety, Health, and Environmental Staff for review.

10.3.5 PROGRAM ELEMENTS

The written CHP will include:

A. Standard operating procedures relevant to employee safety and health.

B. Criteria (i.e., type of chemical and frequency or duration of exposure) that will be utilized to determine and implement exposure reducing control measures such as personal protective equipment (e.g., appropriate respiratory protection during necropsy of psittacosis infected birds), engineering controls (e.g., use of chemical fume hoods for distillations), or hygiene practices (e.g., showering in or showering out).

C. Circumstances that may require prior approval such as analyses or reactions that are not routinely performed.

D. Requirements that fume hoods and other types of protective equipment are functioning properly, including measures to ensure proper and adequate maintenance.

E. Provisions for additional employee protection for work with particularly hazardous substances such as select carcinogens, reproductive toxins, and substances that are acutely toxic. Those provisions will include, where appropriate, the establishment of regulated areas, the use of protective containment devices, procedures for safe removal of contaminated waste, and decontamination procedures.

F. Unknown materials and the chemical intermediates produced in Agency laboratories, and will be treated as particularly hazardous until proven otherwise.

10.3.6 TRAINING

A. Training and information will be provided at employees' initial assignments and prior to new potential exposure situations. Employees will be informed of the OSHA standard and the APHIS program; the location of the CHP; exposure standards for materials in use or chemical intermediates produced in the laboratory (i.e., PEL's, and TLV's); signs and symptoms associated with exposure to hazardous chemicals used in the laboratory; and the location of reference materials on the hazards, safe handling, storage and disposal of hazardous materials found in the laboratory. MSDS's and labels are examples of this type

of information.

B. Training will include: methods and observations that may be used to detect the presence or release of a hazardous chemical (e.g., operation of continuous monitors, odor, or appearance of chemicals in the environment); the physical and health hazards of chemicals in the work area; appropriate work practices, emergency procedures and personal protective equipment that can be used to protect employees; and, as appropriate, applicable details of the written CHP.

10.3.7 MEDICAL EVALUATIONS

A. Employees who work with potentially hazardous chemicals will receive medical attention (to include all physical examinations) whenever:

- They experience signs/symptoms associated with exposure to a hazardous material that they may have been exposed to in the workplace,

- Required for those substances which have an associated exposure level and medical examination requirement (e.g., formaldehyde or ethylene oxide), or

- They are exposed to hazardous materials as a result of a spill or leak or other such occurrence.

B. All examinations will be provided without cost to the employee, on official time and at a reasonable time and place. Refer to the Safety and Health Manual, Chapter 7, Section 5, "Employees' Occupational Health Services," for details. The physician will be provided with the identity of the hazardous materials the employee was exposed to, conditions under which the exposure occurred, and a description of the employee's signs/symptoms.

C. The physician will be required to provide a written opinion with recommendations for further testing, results of any tests that revealed conditions which may place the employee at increased risk to chemicals in the workplace, and a statement that the employee had been informed of the information in the written report. APHIS Form 29 can be used for payment of physical evaluations.